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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,962	08/31/2000	YING CHIH CHANG	03848-00050	4091

7590

12/04/2002

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EXAMINER

BAKER, MAURIE GARCIA

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

FILE

Office Action Summary

Application No.

09/652,962

Applicant(s)

Chang et al

Examiner

Maurie G. Bak r, Ph.D.

Art Unit

1639

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 18, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) 5, 6, and 9-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other:

DETAILED ACTION

Please note: The number of Art Unit 1627 has been changed to 1639. Please direct all correspondence for this case to Art Unit **1639**.

1. The Response filed on September 18, 2002 (Paper No. 17) is acknowledged. No claims were cancelled, added or amended in this response. Therefore, claims 1-21 are pending.

Election/Restriction

2. Applicant's election with traverse of Group I (claims 1-8) is acknowledged as well as the election of species. The traversal is addressed below.

3. Applicants traverse the Restriction Requirement in the Responses filed September 18, 2002 and February 19, 2002 (Paper Nos. 17 and 8, respectively), stating that the inventions are "interrelated to the extent that a search and examination of the subject matter of the claims in the same application would not be overburdensome". However, the examiner maintains that the inventions are distinct for the reasons set forth in paragraphs 3-5 of the Restriction Requirement. Moreover, as stated in the Restriction Requirement, the different inventions have acquired a separate status in the art as shown by their different classification and/or divergent subject matter. The different methods and product would require different searches in both the patent and non-patent databases, and *there is no expectation that the searches would be coextensive* (emphasis added).

Therefore, this does create an undue search burden. The requirement is still deemed proper and is therefore made FINAL.

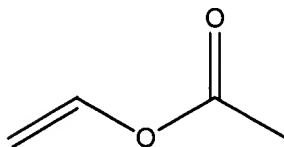
4. Thus, claims 9-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions, the requirement having been traversed in Paper No. 8.

5. With respect to the species, the species are distinct, each from the other, because their structures and modes of action are different. They would also differ in their reactivity and the starting materials from which they are made. Therefore, the species have different issues regarding patentability and represent patentably distinct subject matter. For these reasons, the species election is maintained. However, please note the following from MPEP § 803.02 with respect to species elections:

On the other hand, should no prior art be found that anticipates or renders obvious the elected species, the search of the Markush-type claim will be extended. If prior art is then found that anticipates or renders obvious the Markush-type claim with respect to a nonelected species, the Markush-type claim shall be rejected and claims to the nonelected species held withdrawn from further consideration. The prior art search, however, will not be extended unnecessarily to cover all nonelected species. Should applicant, in response to this rejection of the Markush-type claim, overcome the rejection, as by amending the Markush-type claim to exclude the species anticipated or rendered obvious by the prior art, the amended Markush-type claim will be reexamined. The prior art search will be extended to the extent necessary to determine patentability of the Markush-type claim. In the event prior art is found during the reexamination that anticipates or renders obvious the amended Markush-type claim, the claim will be rejected and the action made final. Amendments submitted after the final rejection further restricting the scope of the claim may be denied entry.

6. In the Response filed February 19, 2002, applicant elected the species of "one monomer" which reads on claims 1-4 and 6-8 (with claim 5 being drawn to a non-elected species). It is noted that in the most recent Response (filed September 18, 2002)

applicant elected the species of vinyl acetate for the monomer. This nomenclature denotes the following single compound:



vinyl acetate

This compound is found in the instant Specification in Figure 5 (as compound **XII**). As is evident from the structure, this compound does not read on *either* of the monomers of claim 6. Thus, claim 6 is also drawn to non-elected species.

7. Therefore, claims 5 and 6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected *species*, there being no allowable generic or linking claim. Note that applicant's elected species was found in the art and therefore the search has not been extended to non-elected species.

8. Claims 1-4, 7 and 8 are examined on the merits in this action.

Inventorship

9. In view of the papers filed June 12, 2002, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The inventorship of this application has been changed by addition of Ying Chih Chang and Curtis W. Frank.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

Information Disclosure Statement

10. The information disclosure statement filed July 30, 2001 fails to *fully* comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to for the non-translated Japanese patents JP H2-34479 and JP H3-99702 has not been considered.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent. **Please see attachment.**

12. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al (Anal. Chem. 1997; on PTO-1449).

It is noted that instant claim 1 recites “for use in solid-phase synthesis of macromolecules”. This is deemed to be an intended use recitation and has not been given any patentable weight. Note that the “preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone.” *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976). In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). The reference below reads on all of the claimed limitations except for the intended use and thus is deemed to anticipate the instant claims.

Huang et al disclose a method of surface-initiated radical polymerization on silica that reads on the claimed method (see Abstract and Scheme 2). Specifically, the reference discloses “preparing polymeric thin films” where “living radicals are used to greatly improve the control of the reaction” (page 4577, 2nd column, bottom). The thin film of the reference reads on the claimed “polymeric brush”. As shown in Scheme 2, benzyl chloride free radical initiators are covalently attached to a silica surface (also see description of reaction in

Scheme 1). This reads directly on the claimed “radical generation site distal to the substrate” and also on the limitations of instant claim 3. Vinyl-containing monomers are reacted with the benzyl chloride free radical initiators on the surface via a living radical polymerization (see page 4578, 1st column and Schemes 1 & 2); this reads directly on the limitations of instant claims 2 and 4. Also as shown in Scheme 2, the polymer thin film product formed by the method of Huang et al contains amino groups, reading on the instant claim 7.

13. Claims 1-4, 7 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Klaerner et al (US 2002/0001845 A1).

It is noted that instant claim 1 recites “for use in solid-phase synthesis of macromolecules”. This is deemed to be an intended use recitation and has not been given any patentable weight. Note that the “preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone.” *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976). In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). The reference below reads on all of the claimed limitations thus is deemed to anticipate the instant claims; although the

intended use has not been given any patentable weight, it is noted that Klaerner et al *does* disclose that their polymer brush substrates can have biological molecules attached thereto (see, for example, paragraphs [0002], [0132] – [0135] and claims 1-6 of the reference).

Klaerner et al disclose a polymer brush “for binding a molecule” where the polymer brush is attached to a surface and is made by reaction of a surface bound initiator (see Figures 2-4 and claims 1-6 & 8-15, for example). The reference discloses radical initiators that are covalently attached to a surface such as glass or silica (see paragraphs [0016] – [0019]; Figure 2 and paragraph [0060]). This reads directly on the claimed “radical generation site distal to the substrate” and also on the limitations of instant claim 3. Vinyl-containing monomers are used in the method of Klaerner et al, reading on the limitations of claim 4; see, for example, claim 2 of the reference. Living free radical polymerization (reading on instant claim 2) is specifically disclosed by Klaerner et al; see paragraphs [0065] – [0068] of the reference. Klaerner et al disclose a wide variety of different functionalities on their polymer brushes that read on those of instant claim 7 (see paragraph [0133]). The reference also specifically discloses using vinyl acetate (as in instant claim 8) as a monomer for polymer brush formation (see paragraph [0126]).

Status of Claims/Conclusion

14. No claims are allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (703) 308-0065. The examiner can normally be reached on Monday-Thursday and alternate Fridays from 9:30 to 7:00.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached at (703) 306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Maurie Garcia Baker, Ph.D.
November 25, 2002

A handwritten signature in black ink, appearing to be 'MB' followed by a long horizontal stroke.

**MAURIE GARCIA BAKER, Ph.D.
PATENT EXAMINER**